

# WinFS Schema

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# About this presentation

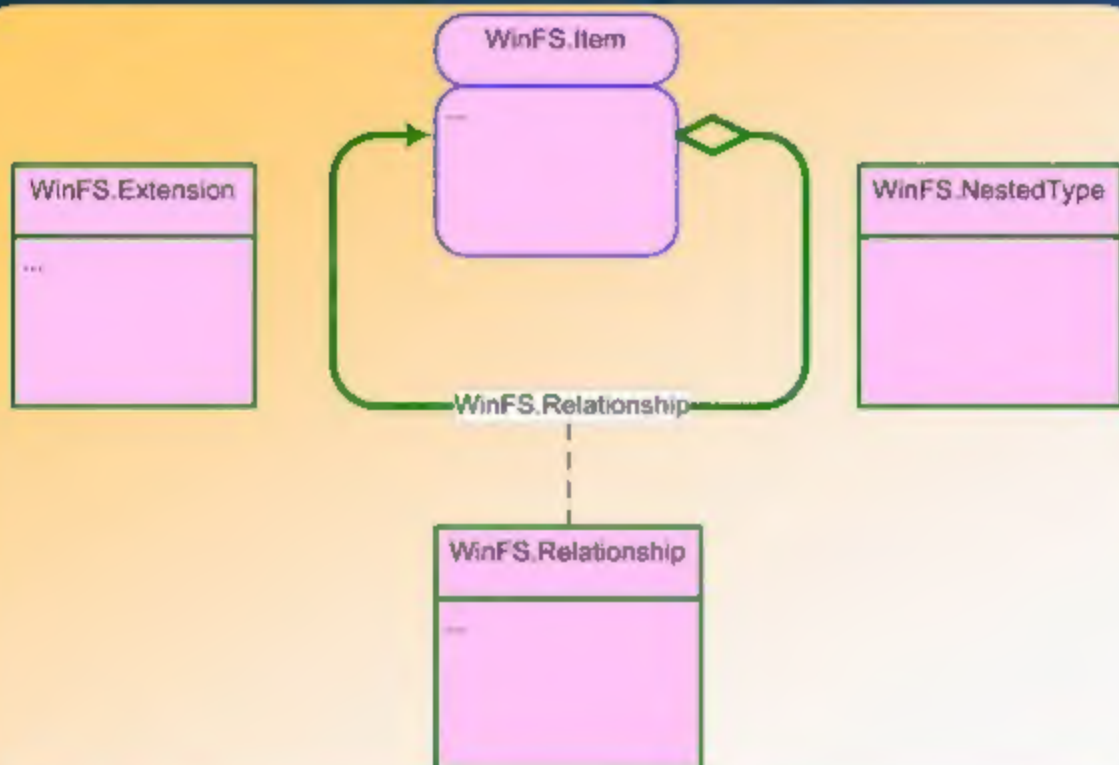
- Agenda
  - Review WinFS Data Model
  - Look at some schemas
    - Base, Contact, Location, Calendar, Task, Document, Media, miscellaneous junk
  - Talk about schema design

# Objectives

After attending this presentation, you will :

- Understand the WinFS types
- Know which core types WinFS will have in V1
- Understand in detail Contacts, Calendar, Tasks and Documents
- Be able to outline the schema design process

# Data Model: Basic Types



# Item

Target  
Role

Target  
Type

Relationship  
Properties

Relationship

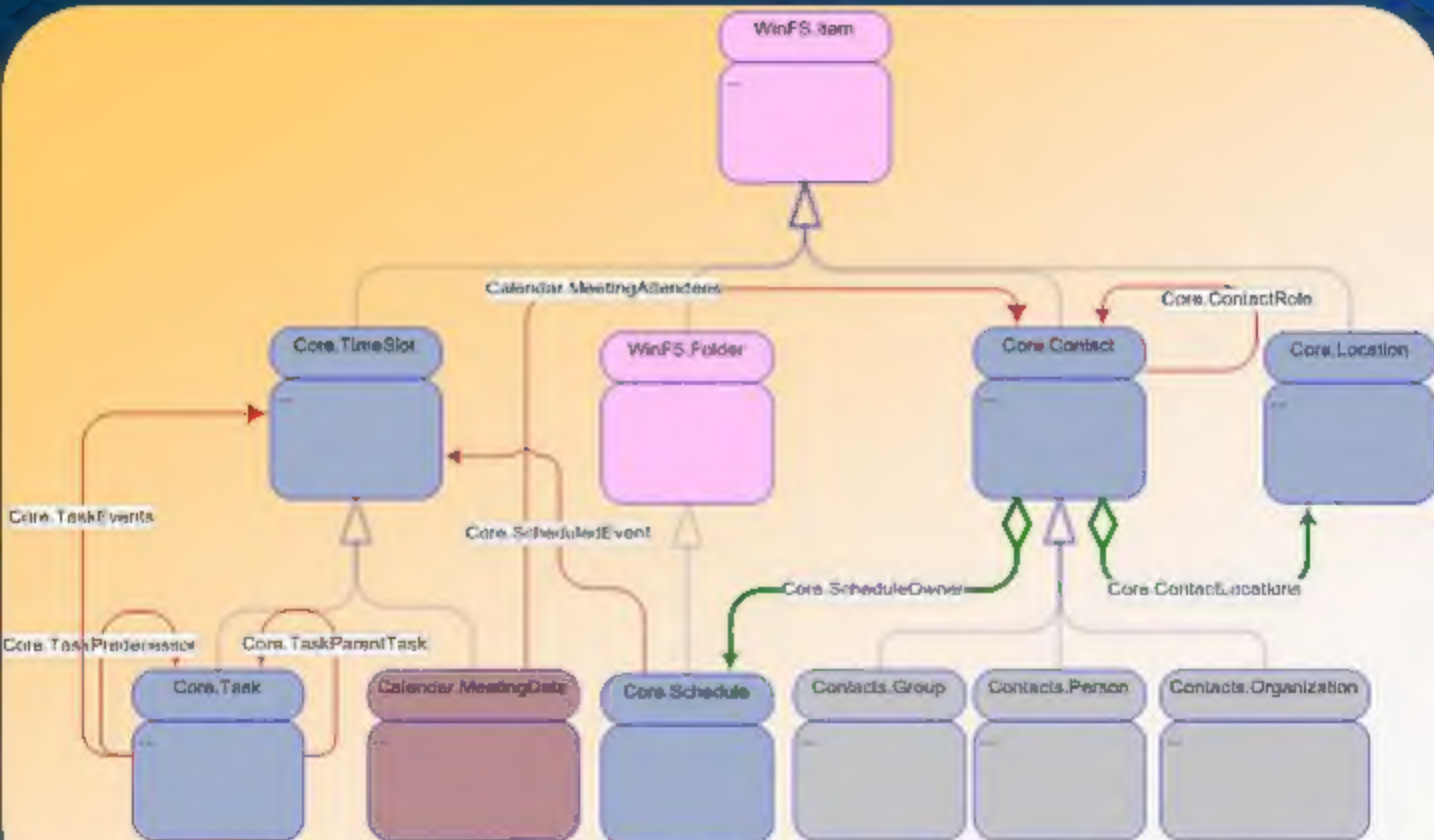
Source  
Role

Source  
Type

WinFS.Item

CreationTime:DateTime Optional  
DisplayName:String(256) Optional  
IsFileBacked:Boolean Optional  
ItemId:Guid Required  
LastModificationTime:DateTime Optional  
SavedFrom:Item  
    ◄► AttachmentSavedFrom.ClientAttachment  
SourceItem:Item  
    ◄► AttachmentSource.ClientAttachment  
Target:Item  
    ◄► Relationship.Source  
        IsHidden:Boolean Required  
        Mode:Int32 Required  
        Name:String(255) Optional  
        RelationshipId:Guid Required  
        SourceItemId:Guid Required  
        TargetItemId:Guid Optional  
Target:Item  
    ◄► SerializedRelationship.Source  
        Content:Binary(max) Required  
        MissingType:String(512) Optional  
        Type:String(512) Required  
Attachment:Item  
    ◄► Attachments.Parent  
ComponentItem:Item  
    ◄► Component.Parent

# Overview



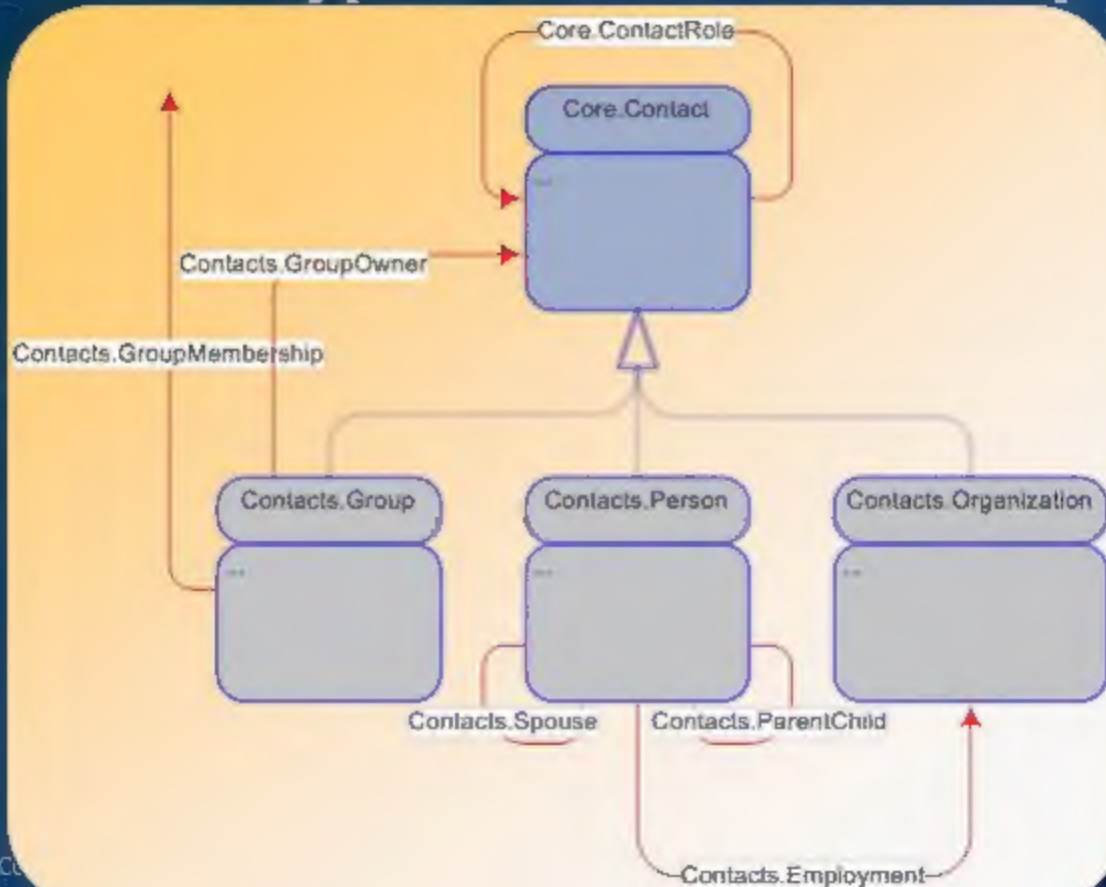
# Contacts

- Basic Scenarios
  - Something I can send a message to
  - People, Organizations, Groups
  - Many interesting Contact-Contact relationships
    - Spouse, Child, Employer





# Contacts: Types and Relationships





# Core.Contact Details

## Core.Contact

EAddresses:ContactEAddress MultiSet  
Description:String(1024) Optional  
EndDate:DateTime Optional  
Label:ContactEAddressLabel Optional  
OutOfBox:Int32 Optional  
UserEntered:String(32) Optional  
StartDate:DateTime Optional  
Notes:RichText MultiSet  
Plain:String(max) Optional  
UserTile:Binary(max) Optional  
ContactTarget:Contact  
◀▶ContactRole.ContactSource  
EAddresses:ContactEAddress MultiSet  
Description:String(1024) Optional  
EndDate:DateTime Optional  
Label:ContactEAddressLabel Optional  
OutOfBox:Int32 Optional  
UserEntered:String(32) Optional  
StartDate:DateTime Optional  
EndDate:DateTime Optional  
StartDate:DateTime Optional

# Contact.Person Properties

## Contacts.Person

Accreditations:Accreditation MultiSet  
Value:String(25) Required  
BirthDate:DateTime Optional  
ExpirationDate:DateTime Optional  
Gender:Keyword Optional  
Value:String(256) Required  
PersonalNames:FullName MultiSet  
...  
Profession:Keyword MultiSet  
Value:String(256) Required

## Contacts.FullName

DisplayAs:String(255) Optional  
GivenName:String(64) Optional  
Keywords:Keyword MultiSet  
Value:String(256) Required  
MiddleName:String(64) Optional  
Nickname:String(64) Optional  
PronunciationGivenName:String(128) Optional  
PronunciationSurname:String(128) Optional  
Suffix:String(64) Optional  
Surname:String(64) Optional  
Title:String(64) Optional

# Contact.Person Relationships

- ◀ FaxAccountContact
- ◀ ServiceProvider
- ◀ AttachmentParticipants
- ◀ MessageParticipants
- ◀ AppointmentAttendee
- ◀ Annotator
- ◀ Assignment
- ◀ Execution
- ◀ Ownership
- ◀ GroupContact
- ◀ GroupOwner
- ▶ Presence
- ◀ Listeners
- ◀ RadioStationContentDistributor
- ◀ ContactsInPicture
- ◀ ContentDistributor
- ◀ ADSynchronizationPublisher
- ◀ CommodityOwner
- ▶ ContactLocations
- ◀ ▶ ContactRole
- ◀ DocumentAuthor
- ◀ DocumentRelevantContacts
- ◀ Publisher
- ◀ ▶ EmployeeAssistant
- ◀ ▶ EmployeeManager
- ▶ Employment
- ◀ HouseholdMember
- ◀ ▶ ParentChild
- ▶ PersonPersonalPicture
- ◀ ▶ Spouse

# Contacts.Organization Details

## Contacts Organization

OrganizationPronunciationName String(1024) Optional  
Employee Person

◀ Employment Employer

EmployeeID String(60) Optional

EmployeeStatus Keyword Optional

Value String(256) Required

EmployeeTitle Keyword Optional

Value String(256) Required

EndDate DateTime Optional

StartDate DateTime Optional

ParentOrganizationTarget Organization

◀▶ ParentOrganization.OrganizationSource

# Task Schema

## Basic Scenarios

- Outlook task
  - Someone managing their time
- Win OE task
  - Group of people cooperating to get something done
- CRM task
  - Visit to the doctor
- System task



# Core.Task Details

## Core Task

Constraint.Xml Optional  
Description String(max) Optional  
DueBy DateTime Optional  
Ended DateTime Optional  
ExpectedDuration Int64 Optional  
Method String(200) Optional  
Outcome Keyword Optional  
    Value String(256) Required  
PercentAllocation Int16 Optional  
PercentComplete Int16 Optional  
Priority Int32 Optional  
ScheduledStart DateTime Optional  
Started DateTime Optional  
Status String(64) Optional  
TimeTaken Int64 Optional  
Events Event  
    ▶ TaskEvents Flow  
ParentTask Task  
    ◀▶ TaskParentTask Task  
        Constraints FlowConstraint MultiSet  
        Value.String(1024) Optional  
Predecessor Task  
    ◀▶ TaskPredecessor Task  
        Constraints FlowConstraint MultiSet  
        Value.String(1024) Optional



# UserTask.Task Details

## UserTask.Task

Assignee:Contact

▶ Assignment.AssignedTask

Executor:Contact

▶ Execution.ExecutedTask

Originator:Item

▶ Origin.OriginatedTask

Owner:Contact

▶ OwnerShip.OwnedTask

Category:CategoryDictionaryEntry

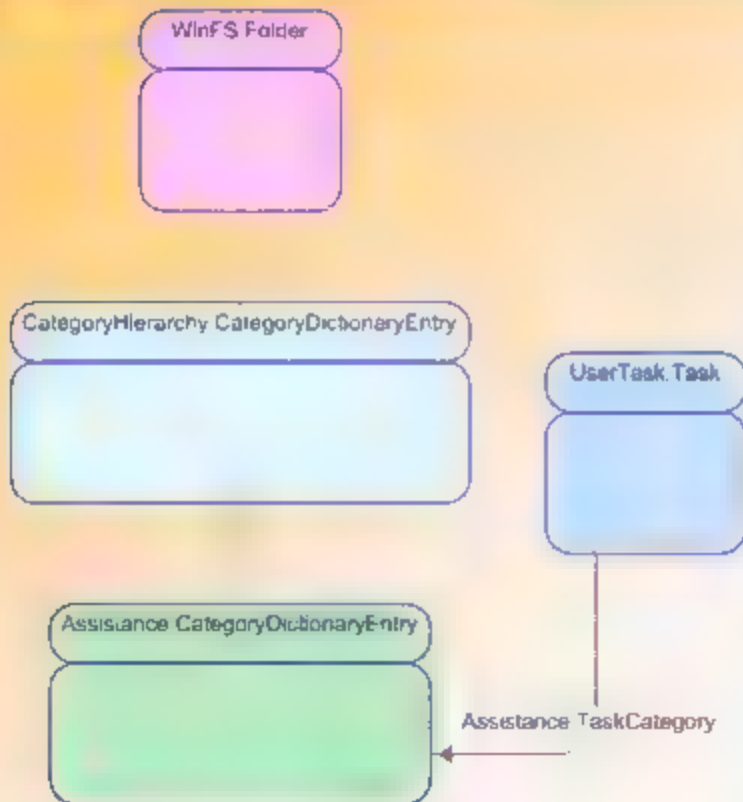
▶ TaskCategory.Task

CategoryType:String(32) Optional

DisplayName:String(256) Optional

Order:Int32 Optional

# Using Tasks



# Related Topics

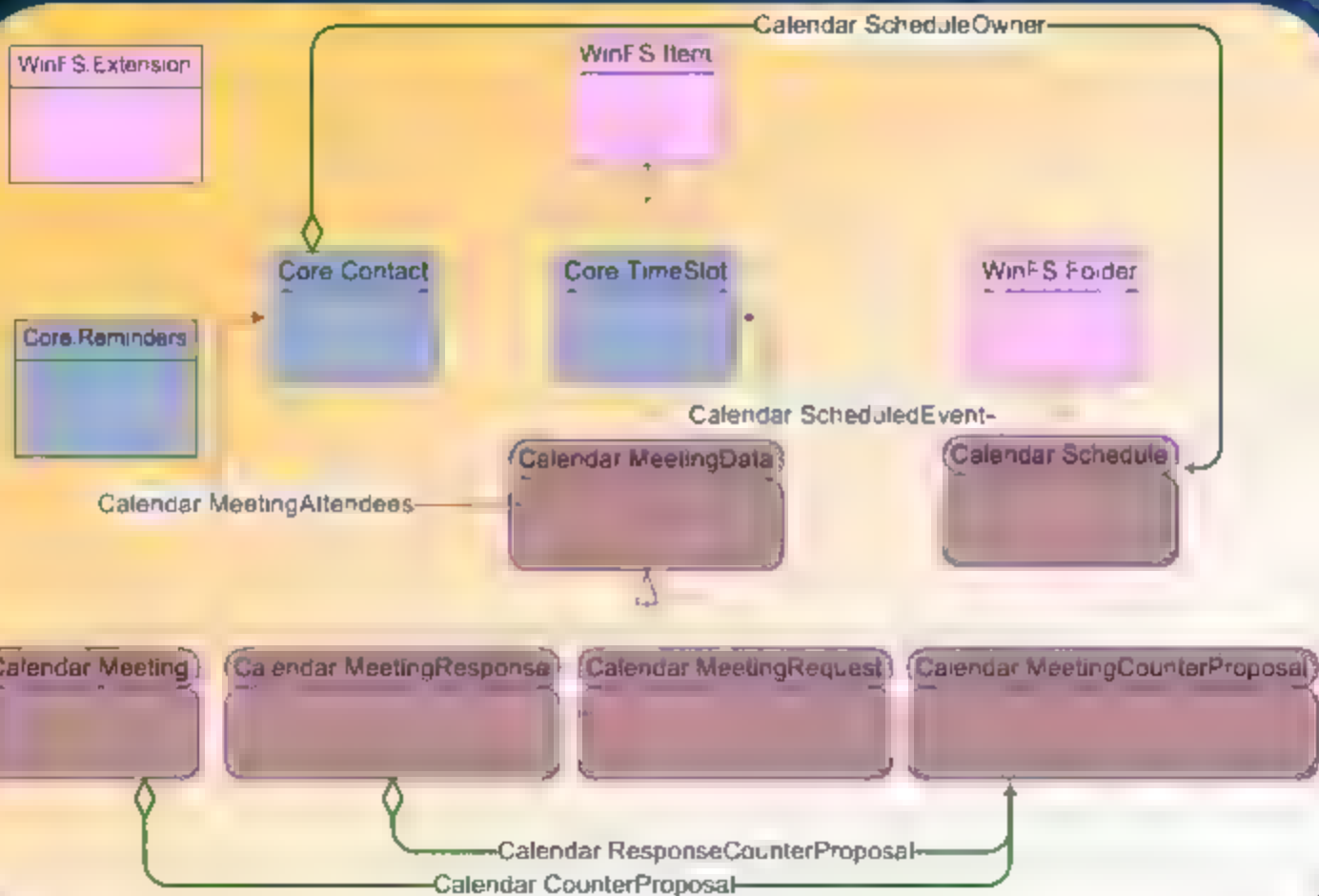
- Task Requests
- People, Principals and Accounts
- Tasks and Resources

# Calendar Schema

## Basic Scenarios

- Meetings and tasks
- Inbox/outbox/Draft
- Schedules
- Accept and decline
- Recurrences

# Calendar



# Core.TimeSlot

## Core.TimeSlot

Description String(1024) Optional

EndTime DateTime Required

IsReminderSet Boolean Optional

Preview String(256) Optional

StartTime DateTime Required

Recurrence RecurrenceData Optional

ExceptionItem TimeSlot

◀▶ Exception TimeSlot

ExceptionData ExceptionData Required

DeletedAttachments Binary(512) Optional

DeletedAttendees Binary(1024) Optional

DeletedBody Boolean Optional

DeletedReminder Boolean Optional

ModifiedPropertyNames Binary(512) Optional

OriginalInstanceStartTime.DateTime Required

# TimeSlot Recurrences

## Core RecurrenceData

AdvanceH nValue Int32 Optional  
 AfterDay Int32 Optional  
 CalendarType Keyword Required  
     Value String(256), Required  
 DayOfMonth Int32 Optional  
 DeleteExceptionDates Binary(1024), Optional  
 FirstDayOfWeek Int32 Required  
 ForceExact Boolean Optional  
 Fr Boolean Optional  
 Interval Int32 Required  
 IsLeapYear Boolean Optional  
 IsRegenerated Boolean Optional  
 LeapMonthValue Int32 Optional  
 Mo Boolean Optional  
 MonthOfYear Int32 Optional  
 RepeatForever Boolean Optional  
 RepeatInstances Int32 Optional  
 RepeatType Int16 Required  
 Sa Boolean Optional  
 Su Boolean Optional  
 Th Boolean Optional

## TimeZone TimeZone Required

AdditionalDaylightBias Int32 Optional  
 DaylightTransition TimeZoneTransition Optional  
     TransitionAfterDay Int32 Optional  
     TransitionDay Int32 Optional  
     TransitionMonth Int32 Optional  
     TransitionTime DateTime Optional  
     TransitionWeek Int32 Optional  
     TransitionWeekDayOfMonth Int32 Optional

## StandardBias Int32 Required

StandardTransition TimeZoneTransition Optional  
     TransitionAfterDay Int32 Optional  
     TransitionDay Int32 Optional  
     TransitionMonth Int32 Optional  
     TransitionTime DateTime Optional  
     TransitionWeek Int32 Optional  
     TransitionWeekDayOfMonth Int32 Optional

## TimeZoneName String(32) Optional

Tu Boolean Optional  
 We Boolean Optional  
 WeekOfMonths Int32 Optional  
 WindowEnd DateTime Optional  
 WindowStart DateTime Required



# Calendar.Meeting Relationships

## Calendar MeetingData

LastMeetingUpdateTime DateTime Required

Attendee Contact

► MeetingAttendees Meeting

AttendeeEmail EAddress(0) MultiSet

AccessPoint String(1024) Required

AccessPointType Keyword Required

Value String(256) Required

DisplayName String(1024) Optional

SimpleDisplayName String(1024) Optional

AttendeeInviteType Int32 Required

AttendeeResponseTime DateTime Optional

AttendeeResponseType Int32 Optional

IsInviteSent Boolean Optional

Order Int32 Optional

ResponseRequested Boolean Optional

## Calendar Meeting

CounterProposal MeetingCounterProposal

► CounterProposal Meeting

# Document Scenarios

- Document can be opened and edited by a suitably capable application
- Documents have authors
- People and organizations can be associated with documents in various ways
  - Reviewers, Approvers, Owners etc
- Documents have titles
- Documents contain text and can be printed

# Document Types

Core Document

..

Media Document

...

Core StructuredDocument

Core XmlDocument

Core BinaryDocument

# Document Relationships

## WinFS Item

### FaxMessage Message

◄FaxMessageContents Contents

### Message Message

► AttachmentMessage ClientAttachment

### SavedFrom Item

◄► AttachmentSavedFrom ClientAttachment

### Source Item Item

◄► AttachmentSource ClientAttachment

### Message Message

◄MessageContents Contents

### Contact:Contact

◄Presence Service

### Attachment Item

◄► Attachments.Parent

## Core Document

### FaxMessage Message

◄FaxParticipantCoverPage CoverPage

### Person Person

◄PersonPersonalPicture PersonalPicture

### Document Document

◄EffectiveBackCoverArt.Art

### Document Document

◄EffectiveFrontCoverArt.Art

### Document Document

◄MetadataProviderLogo Logo

### Attachment Item

► DocumentAttachment Document

### Author Contact

► DocumentAuthor Document

### Component Document

◄► DocumentComponent Document

### RelevantContacts Contact

► DocumentRelevantContacts Document

### PreviewDocument Document

◄► Preview Document

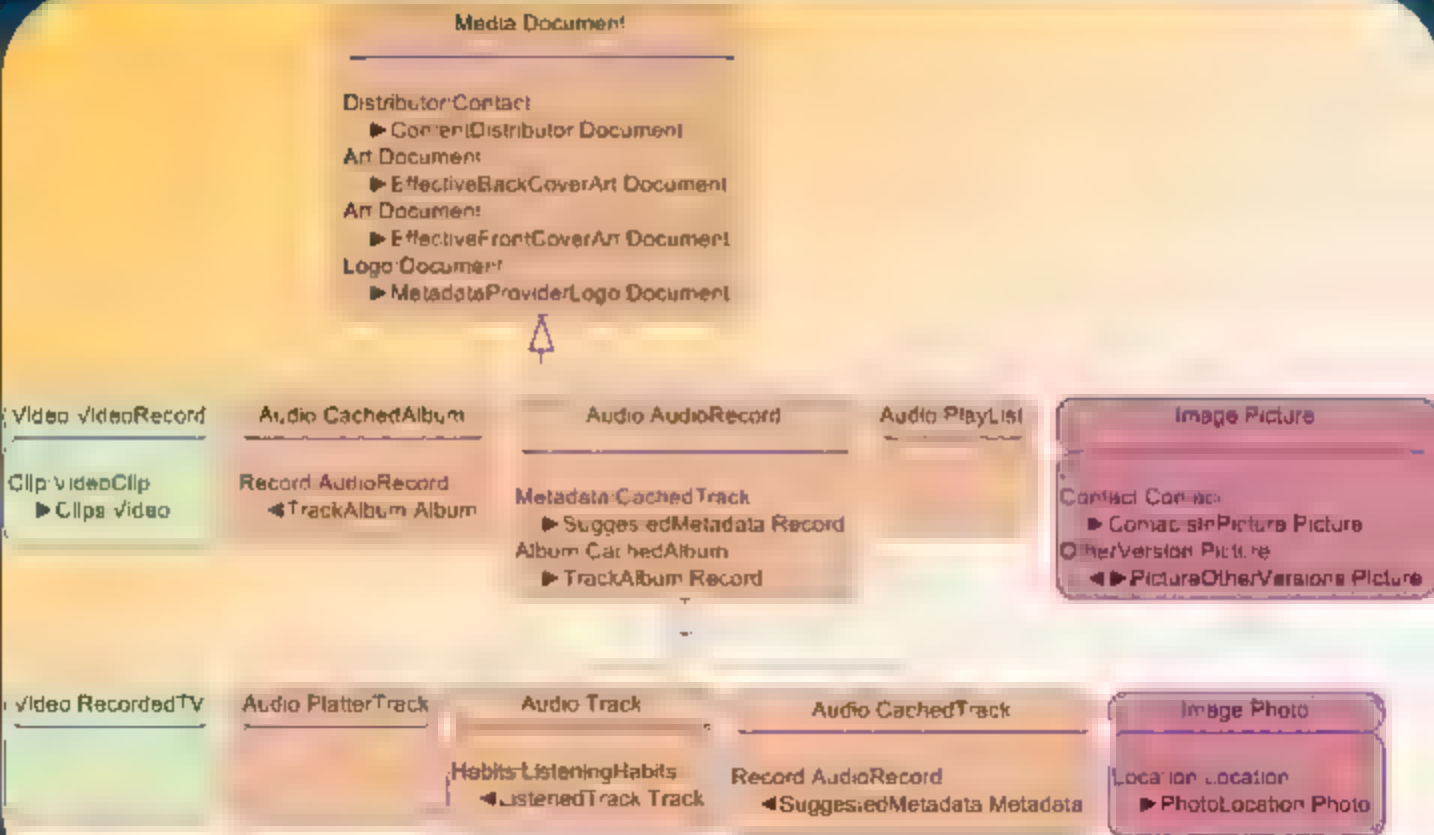
### PreviousDocument Document

◄► PreviousVersion CurrentDocument

### DocumentPublisherContact

► Publisher Document

# Media Schemas



# Media.Document Properties

## Media Document

ContentGroupDescription String(64) Optional

Duration Int64 Optional

Genre MVString256 MultiSet

Data String(256) Required

History History MultiSet

Date DateTime Optional

Name String(128) Optional

Provider String(128) Optional

Type String(64) Required

Value String(128) Optional

SRC String(64) Optional

MediaCatalogNumber String(64) Optional

MediaClassPrimaryID Guid Optional

MediaClassSecondaryID Guid Optional

MetadataProviderCopyright String(256) Optional

MetadataProviderName String(128) Optional

Mood MVString256 MultiSet

Data String(256) Required

NoAutoInfoProcessing Boolean Optional

OriginalPhysicalID String(1024) Optional

Period String(128) Optional

Protected Boolean Optional

ProtectedType String(128) Optional

Rating Rating MultiSet

RatingProvider String(64) Required

Type String(64) Required

RecordingDate DateTime Optional

ReleaseDate DateTime Optional

RelevantUri UriReference MultiSet

UriString String(max) Optional

UriType MVString128 MultiSet

Data String(128) Required

StyleByMetadataProvider MVString256 MultiSet

Data String(256) Required

# Designing Schemas: Details

1. Understand what properties you want to add to WinFS
  1. Pick Names and types for the properties
  2. Decide which properties go together
2. Compare your properties to the existing schemas
  1. Look for any types that have all your properties
  2. Look for any types that have some of your properties
  3. Consider Introducing a new Item type



# Designing Schemas: Details

- 1. "Normalize" your properties
- 2. Look for Nested Types
- 3. Look for Embedded Items
- 4. Look for Relationships
- 5. Factor the type
- 6. Namespaces and scopes
- 7. Does your population overlap with anyone else's?
  - 1. Complete Overlap
  - 2. Partial Overlap
  - 3. No Overlap
- 8. Identifying properties

# Summary

- Lots of schemas
  - PIM
  - Document
  - Media
- Extensible
  - Everybody gets it

# Call to action

- Understand and query
- Write Apps
- Extend schemas

# Resources

- <http://winfs>

# Questions